GE Fanuc Automation

CIMPLICITY® Monitoring and Control Products

CIMPLICITY

CIMPLICITY SQL

Getting Started Guide

GFK-1752A *December 2000*

Following is a list of documentation icons:

Warning notices are used in this publication to emphasize that hazardous voltages, currents, temperatures, or other conditions that could cause personal injury exist in the equipment or may be associated with its use.

In situations where inattention could cause either personal injury or damage to equipment, a Warning notice is used.

Caution provides information when careful attention must be taken in order to avoid damaging results.

Important flags important information.

To do calls attention to a procedure.

Note calls attention to information that is especially significant to understanding and operating the equipment.

Tip provides a suggestion.

Guide provides additional directions for selected topics.

This document is based on information available at the time of publication. While efforts have been made to be accurate, the information contained herein does not purport to cover all details or variations in hardware or software, nor to provide for every possible contingency in connection with installation, operation, or maintenance. Features may be described herein which are not present in all hardware and software systems. GE Fanuc Automation assumes no obligation of notice to holders of this document with respect to changes subsequently made.

GE Fanuc Automation makes no representation of warranty, expressed, implied, or statutory with respect to, and assumes no responsibility for the accuracy, completeness, sufficiency, or usefulness of the information contained herein. No warranties of merchantability or fitness for purpose shall apply.

This manual was produced using *Doc-To-Help*®, by WexTech Systems, Inc.

Preface

Contents of this Manual

Chapter 1. Introducing CIMPLICITY SQL. Briefly describes CIMPLICITY SQL and provides hardware and software requirements.

Chapter 2. Configuring CIMPLICITY SQL: Quick Start. Lists the steps required to install CIMPLICITY SQL and point CIMPLICITY HMI to the SQL server.

Chapter 3. Installing CIMPLICITY SQL. Lists the steps for installing CIMPLICITY SQL.

Chapter 4. Configuring the ODBC Data Source. Shows how to specify the SQL server location as the ODBC data source.

Chapter 5. Logging Data to CIMPLICITY SQL. Provides a brief description of how to specify CIMPLICITY SQL Server Logging as the logging data source for CIMPLICITY HMI alarms and points.

Related Publications

For more information, refer to these publications:

CIMPLICITY Base System User's Manual (GFK-1180)

Microsoft® SQL Server™ Books Online

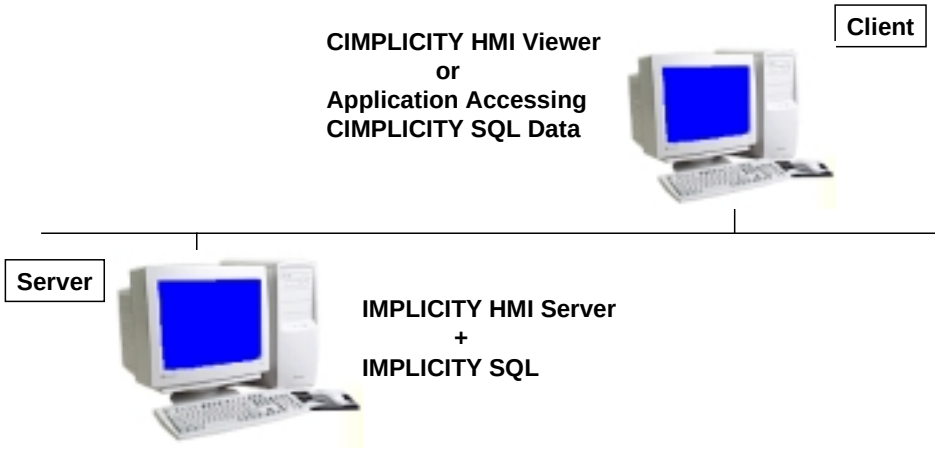
Contents

Introducing CIMPLICITY SQL

Welcome to CIMPLICITY SQL

GE Fanuc has teamed with Microsoft to combine the power of CIMPLICITY with Microsoft® SQL Server™. CIMPLICITY SQL, the result of this effort incorporates Microsoft SQL Server Version 7.0 to make installation and operation of your data logging applications easier than ever.

CIMPLICITY SQL is based on a Client–Server architecture. This fully integrated product offering helps reduce the chance for errors during installation and configuration of the database.



CIMPLICITY SQL Hardware and Software Requirements

CIMPLICITY HMI must be installed in the network in order to use CIMPLICITY SQL. However, CIMPLICITY SQL can reside on a different server from CIMPLICITY HMI.

To install CIMPLICITY SQL software, the destination computer must meet the following requirements.

CIMPLICITY SQL Hardware Requirements

The minimum hardware requirements for CIMPLICITY SQL are:

Category	Subcategory	Requirements
Computer		Intel® or compatible (Pentium 166 MHz or higher, Pentium PRO, or Pentium II)
Memory (RAM)	Standard or Desktop Editions	32 MB minimum
Disk Drive		CD-ROM drive
Hard Disk Space	SQL Server	180 MB (full) 170 MB (typical) 65 MB (minimum)

CIMPLICITY SQL Software Requirements

The minimum software requirements for CIMPLICITY SQL are:

Operating System	Standard Edition	Windows NT Server 4.0 or later with SP4 or later.
	Desktop Edition	Windows NT Workstation 4.0 or later with SP4 or later.
Internet Software		Microsoft Internet Explorer version 4.01 with SP1 or later.
Network Software		Microsoft Windows NT® built-in network software.
Clients Supported		Windows 98, Windows NT Workstation.

Microsoft SQL Server Help

CIMPLICITY SQL provides you with a convenient way to install Microsoft SQL Server. However, when you want to refine SQL Server configuration beyond what is needed to function with CIMPLICITY HMI you might want to take advantage of Microsoft's extensive online help. The help is found in Microsoft's SQL Server Books Online.

To open Microsoft's SQL Server Books Online:

1. Click **Start** on the Windows task bar.
2. Select Programs.
3. Select CIMPLICITY SQL.
4. Select Books Online.

Result: Microsoft SQL Server Books Online opens providing in depth information about Microsoft SQL Server configuration.

Configuring CIMPLICITY SQL: Quick Start

Welcome to CIMPLICITY SQL

CIMPLICITY SQL provides you with a convenient, high-powered and low cost solution for your CIMPLICITY HMI database needs.

In order to accommodate your system's particular configuration needs, CIMPLICITY SQL can be installed wherever it can be most effectively stored. It can also be installed before or after you install CIMPLICITY HMI.

Step 1. Install CIMPLICITY HMI using the CIMPLICITY HMI CD on the CIMPLICITY HMI server.

Step 2. Install CIMPLICITY SQL using the CIMPLICITY SQL CD on the SQL server, which may or may not be the same as the CIMPLICITY HMI server.

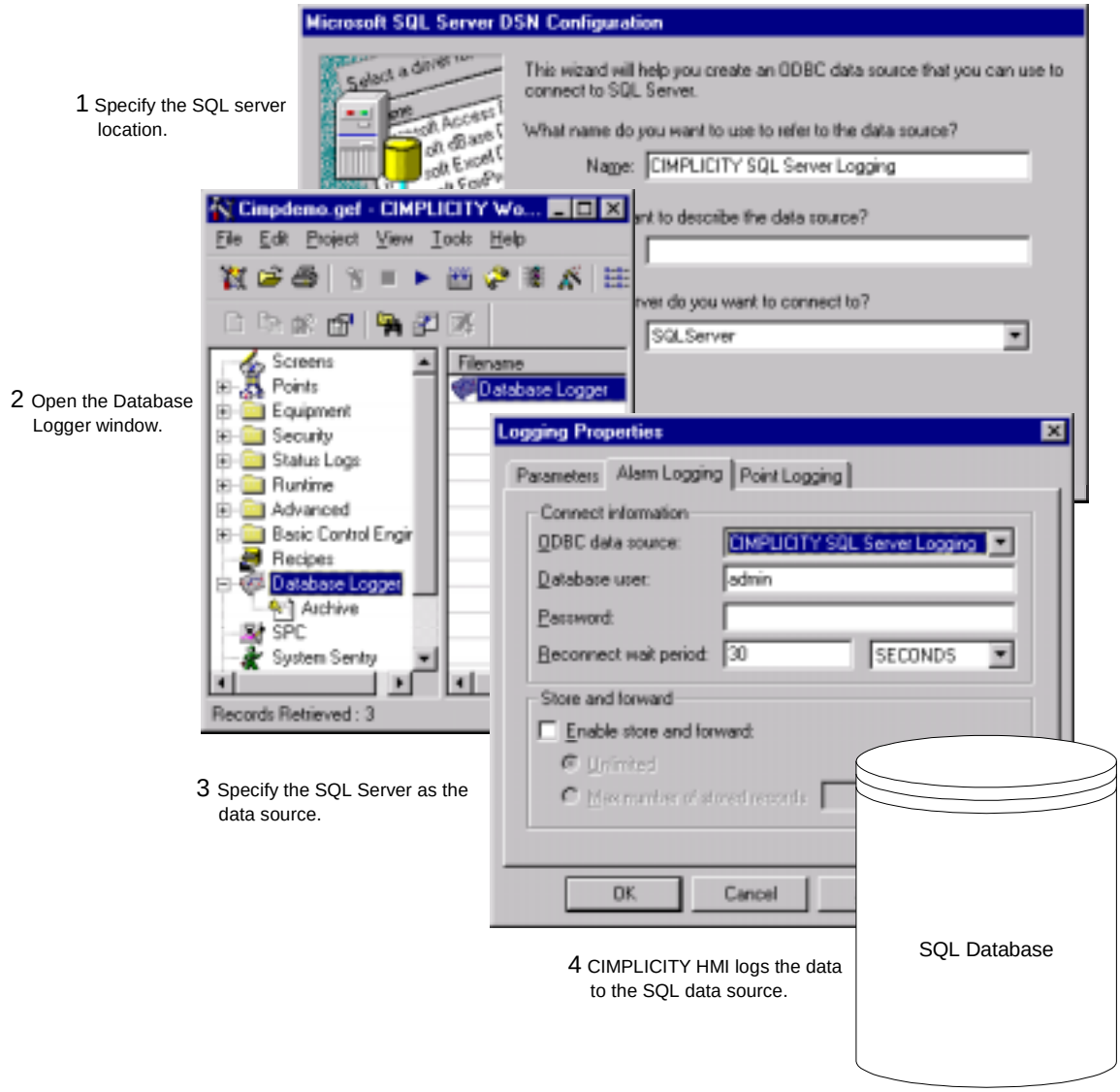
Step 3. Identify CIMPLICITY SQL Server that will be the ODBC data source in the Windows ODBC Data Source Administrator dialog box.

Step 4. Select CIMPLICITY SQL Server Logging as the data source for CIMPLICITY HMI point and alarm logging in the CIMPLICITY Logging Properties dialog box.

Result: CIMPLICITY HMI will now log data to the CIMPLICITY SQL server.

Consult the Microsoft SQL Server documentation for in depth information about configuring SQL Server.

See the "Configuring the Database Logger" and "Managing Database Logger" chapters in the CIMPLICITY HMI Base System User's Manual (GFK-1180) for detailed information about configuring database logging.


1 Specify the SQL server location.
2 Open the Database Logger window.
3 Specify the SQL Server as the data source.
4 CIMPLICITY HMI logs the data to the SQL data source.
Microsoft SQL Server DSN Configuration
This wizard will help you create an ODBC data source that you can use to connect to SQL Server.
What name do you want to use to refer to the data source?
Name: CIMPLICITY SQL Server Logging
SQLServer
Cimpdemo.gef - CIMPLICITY Wo...
File Edit Project View Tools Help
Screens
Points
Equipment
Security
Status Logs
Runtime
Advanced
Basic Control Engir
Recipes
Database Logger
Archive
SPC
System Sentry
Filename
Database Logger
Records Retrieved : 3
Logging Properties
Parameters
Alarm Logging
Point Logging
Connect information
ODBC data source:
CIMPLICITY SQL Server Logging
Database user:
admin
Password:
Reconnect wait period:
30
SECONDS
Store and forward
Enable store and forward:
Unlimited
OK
Cancel
SQL Database

Installing CIMPLICITY SQL

About CIMPLICITY SQL Installation

CIMPLICITY HMI installation follows the familiar Windows applications installation procedures. You will see the following dialog boxes as you install the application.

Note: If you are installing CIMPLICITY SQL on a Windows NT Server version, you will be given the opportunity to specify the licensing mode, Per Seat or Per Server. If you choose Per Server, you can specify the number of concurrent connections that will be allowed. *See Step 7 for more information.*

If you are on a Windows workstation the maximum number allowed concurrent connections is five.

The steps are:

Step 1. Begin CIMPLICITY SQL installation.

Step 2. Review the Welcome screen.

Step 3. Agree to the CIMPLICITY SQL licensing terms.

Step 4. Enter user information.

Step 5. Specify the installation type and file locations.

Step 6. Specify if SQL Service Pack 1 should be installed.

Step 7. Choose the licensing mode. This step only applies when installing on a server.

Step 8. Check the setup data.

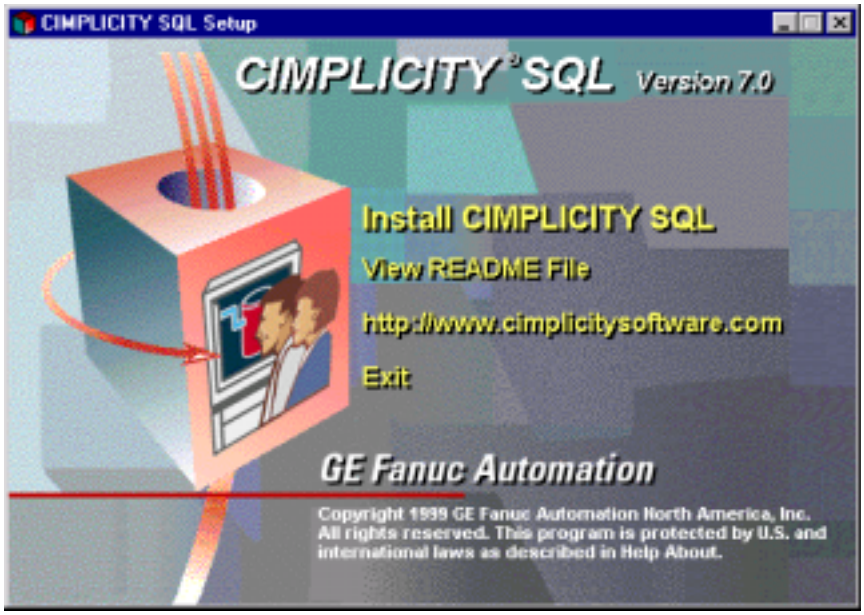
Step 9. View the Readme file.

Step 10. Reboot the computer.

Step 1. Begin CIMPLICITY SQL Installation.

1. Insert the CIMPLICITY SQL CD in the SQL server CD-ROM drive.

   A CIMPLICITY SQL Setup dialog box appears.



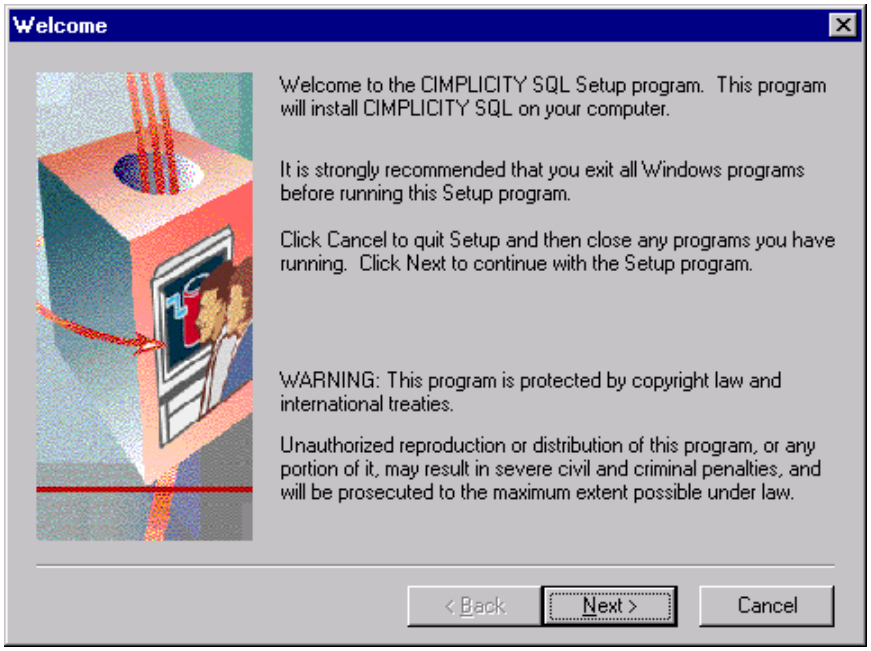
2. Click View README File.

   The CIMPLICITY SQL Readme file opens providing you with last minute information.

3. Close the CIMPLICITY SQL Readme file when you are finished reading it.
4. Click **Install CIMPLICITY SQL**.

Result: A Welcome dialog box appears.

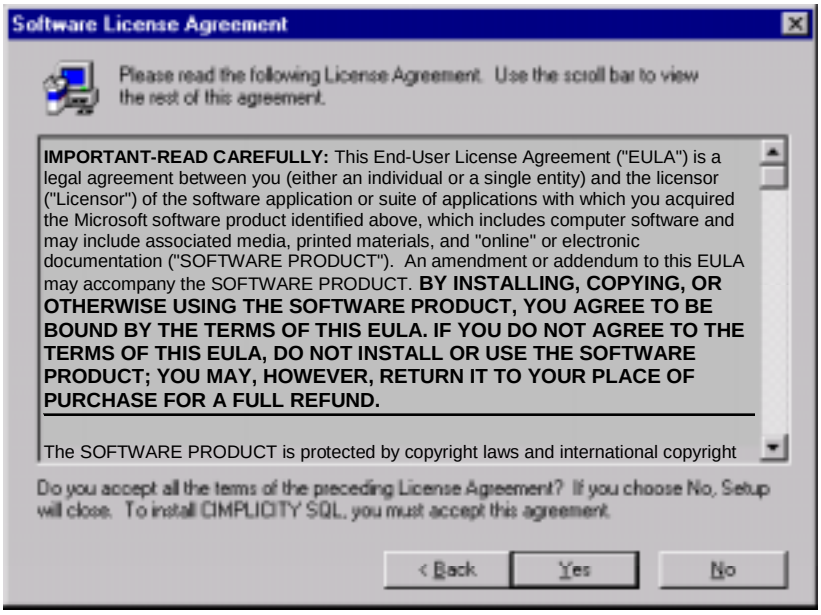
Step 2. Review the Welcome Screen.



1. Read the Welcome screen.
2. Click **Next**.

Result: A Software License Agreement dialog box appears.

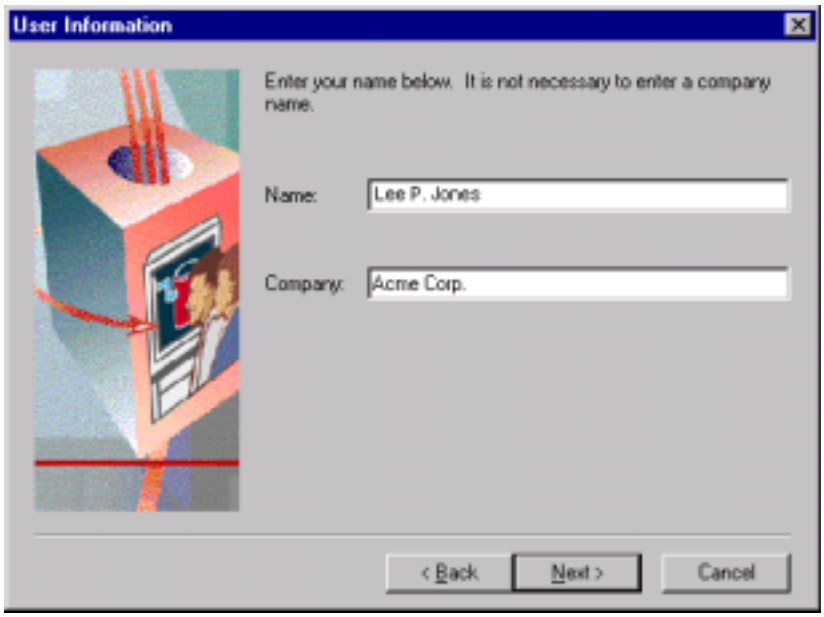
Step 3. Agree to the CIMPLICITY SQL Licensing Terms.



1. Read the license agreement in the Software License Agreement dialog box.
2. Click **Yes**.

Result: A user Information dialog box appears.

Step 4. Enter User Information.

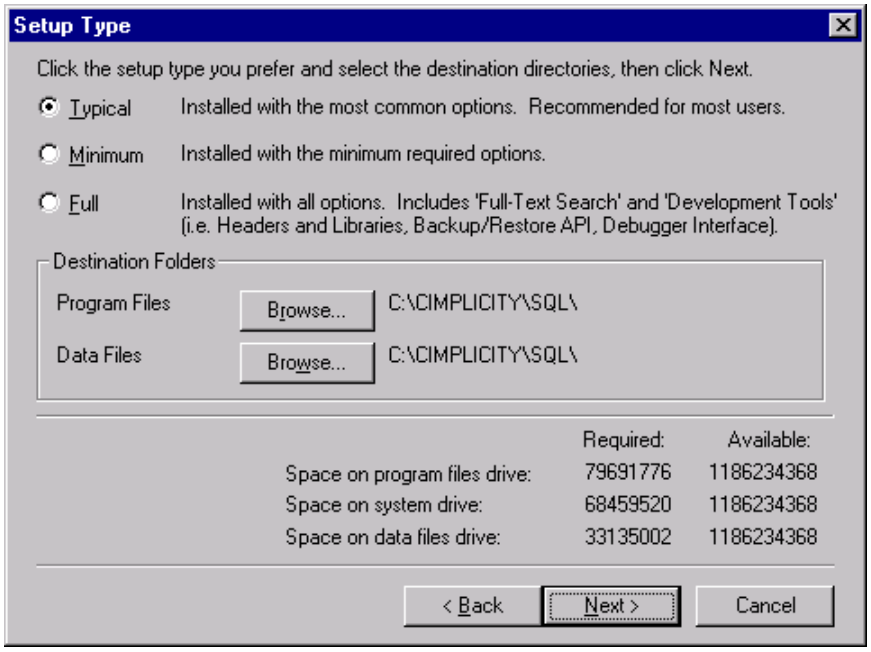


1. Enter the name of the person who is licensed to install CIMPLICITY SQL in the Name field of the User Information dialog box.
2. (Optional) Enter your company name.
3. Click **Next**.

Result: If you did not enter a name, a warning message will appear telling you to enter a name.

If you entered a name, a Setup Type dialog box appears.

Step 5. Specify the Installation Type and File Locations.



1. Click the setup type you prefer in the Setup Type dialog box. The options are:

Type	Installs
Typical	The most common options.
Minimum	The minimum required options.
Full	All the options. A user can use full search capabilities and development tools including headers and libraries, backup/restore API and a debugger interface.

2. Specify the destination for both the Program Files and the Data Files.

   You can change the destination folders from the default **`C:\CIMPLICITY SQL`**. However, the destination *must* be a **local fixed disk**.

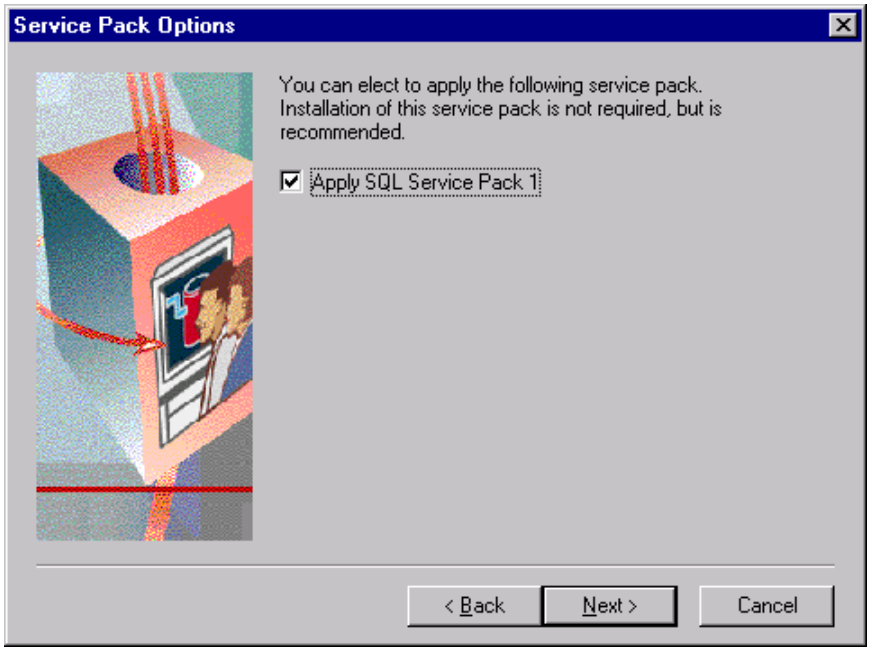
   You *cannot* install to a:

   - Mapped drive.
   - UNC path, e.g., `\\server\share\`.

3. Click **Next** when you have entered your specifications.

Result: A Service Pack Options dialog box appears.

Step 6. Specify if SQL Service Pack 1 should be Installed.

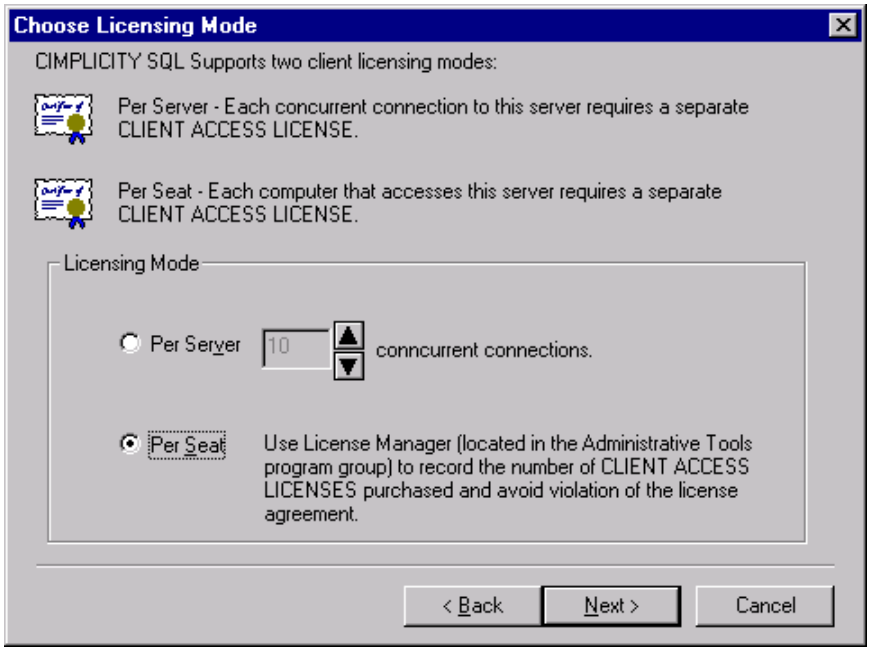


1. Leave Apply SQL Service Pack 1 checked in the Service Pack Options dialog box if you want to install it. Otherwise, uncheck it.
2. Click **Next**.

Result: A Check Setup Data dialog box appears if you are installing CIMPLICITY SQL on a workstation. (Go to Step 8.)

A Choose Licensing Mode dialog box appears if you are installing CIMPLICITY SQL on a server.

Step 7. Choose the Licensing Mode when Installing on a Server.



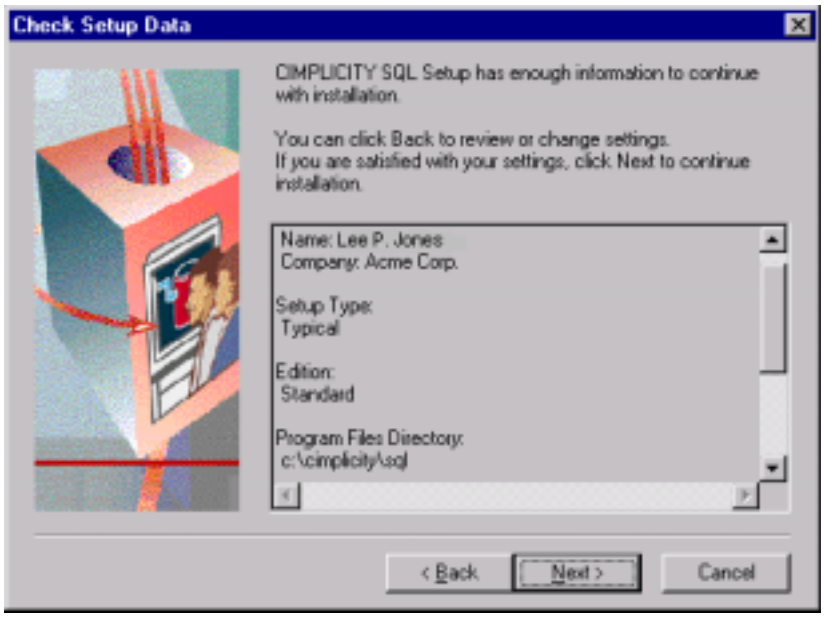
1. Select one of the two licensing mode options in the Choose Licensing Mode dialog box.

Option	Allows
Per Server	Only the number of concurrent connections that are specified in the concurrent connections field.
Per Seat (Recommended)	With Per Seat licensing, a separate Client Access License (CAL) is required for each device that accesses or otherwise utilizes the services of the server software. There is no limitation of the number of CAL computers that can connect concurrently.

2. Click **Next**.

Result: The Check Setup screen appears.

Step 8. Check the Setup Data.

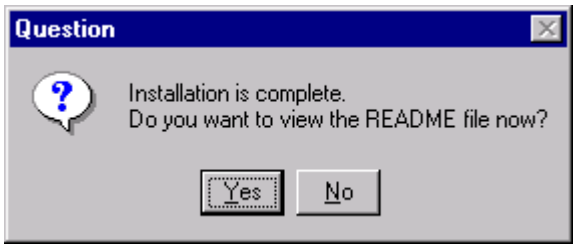


1. Check the settings that CIMPLICITY SQL will use for installation in the Check Setup Data screen.
2. Click
   - **Back** to display previous dialog boxes if any setting needs to be changed.
   - **Cancel** to stop installation.
   - **Next** to continue installation if the settings are correct.

   CIMPLICITY SQL installs the files and creates the program group and icons when you click **Next**.

Result: A Question dialog box appears providing you with the opportunity to read the CIMPLICITY SQL Readme file.

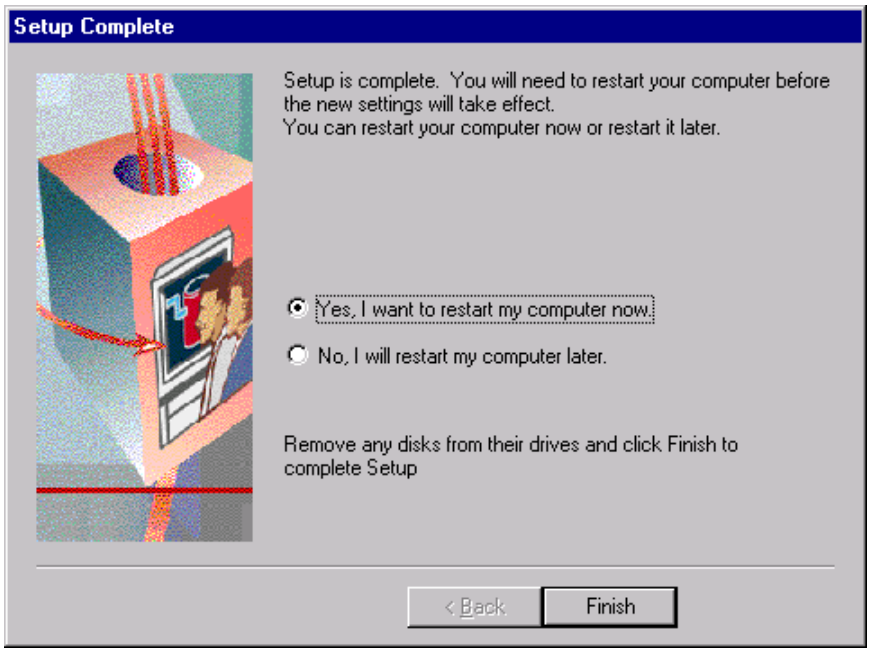
Step 9. View a Readme File.



1. Either:
   A. Click **Yes** to display the CIMPLICITY SQL Readme file.
   B. Click **No**. *Go to Step 10.*
2. Close the Readme file when you have finished reading it.

Result: The Setup Complete dialog box appears.

Step 10. Reboot the Computer.



1. Check Yes in the Setup Complete dialog box to restart your computer. You need to reboot before the settings can take effect.
2. Click **Finish**.

Result: The computer re-boots and is ready for you to continue setting up CIMPLICITY SQL.

Configuring the ODBC Data Source

About the ODBC Data Source

You can install CIMPLICITY SQL on any server you want and you can install it before or after you install CIMPLICITY HMI.

When you install CIMPLICITY HMI, the ODBC driver is installed on the CIMPLICITY HMI server and the SQL server data source is created.

In order to log information to the SQL server of your choice you need to make sure the ODBC driver points to the CIMPLICITY SQL data source.

The steps are as follows.

Step 1. Run CIMPLICITY SQL on the SQL Server.

Step 2. Open the ODBC Data Source Administrator dialog box on the CIMPLICITY HMI server.

Step 3. Specify the SQL Server with which the ODBC driver will communicate.

Step 1. Run CIMPLICITY SQL on the SQL Server

By default when a CIMPLICITY SQL server boots up, the CIMPLICITY SQL installed on that machine will start. You can check its status from any SQL server on your network, if you have security clearance.

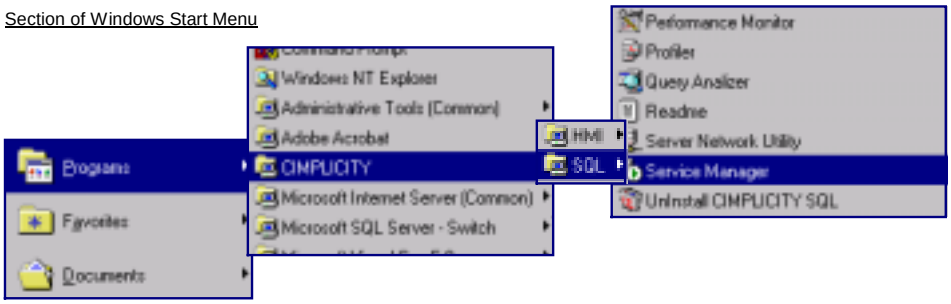
To run CIMPLICITY SQL on the SQL Server:

1. Choose a method to open the SQL Server Service manager dialog box.

   Method 1–Windows Start menu

   A. Click **Start** on the Windows task bar.
   B. Select Programs.
   C. Select CIMPLICITY.
   D. Select SQL.
   E. Select Service Manager.

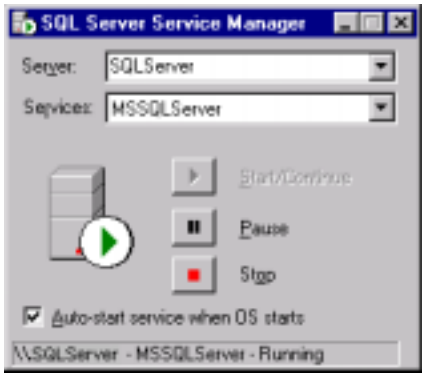
Section of Windows Start Menu



Method 2–CIMPLICITY SQL icon

Click the Service Manager icon on the Windows task bar.

The SQL Server Service Manager opens when you use either method.



2. Display the SQL server on which you have done the CIMPLICITY SQL installation in Server field.
3. Select MSSQLServer in the Services field.
4. Click **Start/Continue** to start the server if it is not running.

   Start/Continue will be dimmed if the server is running.
5. Check the Auto-start service when OS starts check box to have CIMPLICITY SQL start when the SQL server is booted.

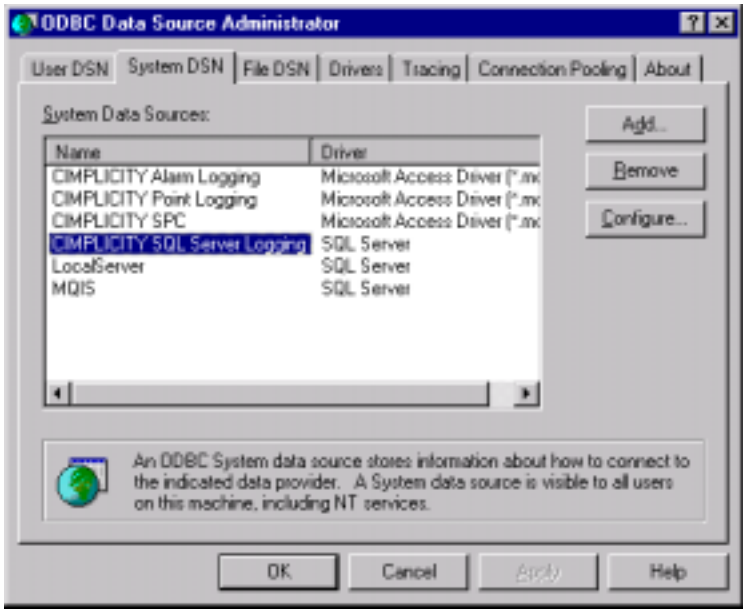
Note: displays when the selected server is running; displays when it is stopped.

Step 2. Open the ODBC Data Source Administrator Dialog Box

1. Open the Windows Control Panel.
2. Click the ODBC Data Sources icon 

.

   The ODBC Data Source Administrator dialog box opens.
3. Select the System DSN tab.



Step 3. Specify the SQL Server with which the ODBC Driver will Communicate.

1. Select CIMPLICITY SQL Server Logging in the list of system data sources in the ODBC Data Source Administrator dialog box.
2. Click **Configure**.

   The Microsoft SQL Server DSN Configuration dialog box appears displaying CIMPLICITY SQL Server Logging in the Name field.

3. Keep CIMPLICITY SQL Server Logging in the Name field.
4. Select the computer name of the CIMPLICITY SQL server, in the Server field. This is the server to which data will be logged.
5. Click either:
   A. **Finish** to complete the SQL Server DSN configuration and maintain the advanced configuration defaults.
   B. **Next** to review and possibly change the configuration defaults.

      Some configuration options include:

      - Specifying how the SQL Server should verify the authenticity of the login ID.
      - Refining client configuration.
      - Changing the default database.
      - Specifying ANSI usage.
      - Dealing with language issues.

      Use the Microsoft Help associated with each dialog box and/or Microsoft Books Online to assist you in configuration.

Result: If you click Finish, the SQL Server DSN configuration, which includes testing connections with the CIMPLICITY SQL server, will be occur.

A SQL Server ODBC Data Source Test screen will display at the end of testing informing you that the configuration was successful.

This ODBC data source can now connect to the selected CIMPLICITY SQL Server Logging database.

Note: CIMPLICITY HMI communicates with the ODBC driver. ODBC communicates with the CIMPLICITY SQL Server Logging database This configuration is a great benefit because, in fact, CIMPLICITY HMI can communicate with any database that has an ODBC driver installed.

Currently CIMPLICITY HMI supports SQL Server, Access and Oracle.

Logging Data to CIMPLICITY SQL

About Logging Data to CIMPLICITY SQL

Once you have pointed the ODBC driver to the CIMPLICITY SQL Server Logging data source, you can easily specify that data source to store CIMPLICITY HMI logged data.

The steps are:

Step 1. Open the CIMPLICITY HMI Database Logger dialog box.

Step 2. Specify CIMPLICITY SQL Server Logging as the data source.

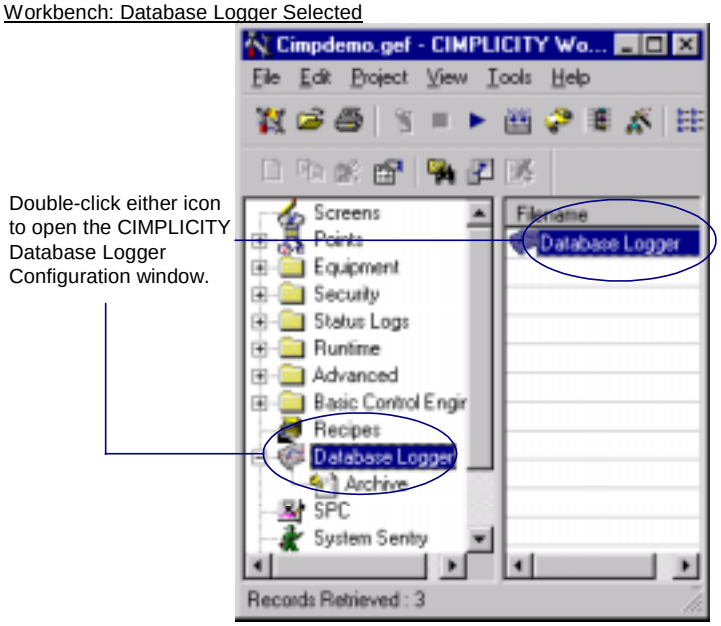
Step 1. Open the CIMPLICITY HMI Database Logger Dialog Box.

You specify the CIMPLICITY SQL database as the ODBC data source in the Database Logger dialog box. Open the CIMPLICITY HMI Database Logger dialog box by any of the following methods.

Method 1–Through the Database Logger Configuration window

1. Double-click **Database Logger** in the left or right pane of the Workbench.

Workbench: Database Logger Selected



The Database Logger Configuration window opens.

2. Open the Logging Properties dialog box. To do this:

   Click the **Logging Properties** icon on the Database Logger Configuration window toolbar,

   Or

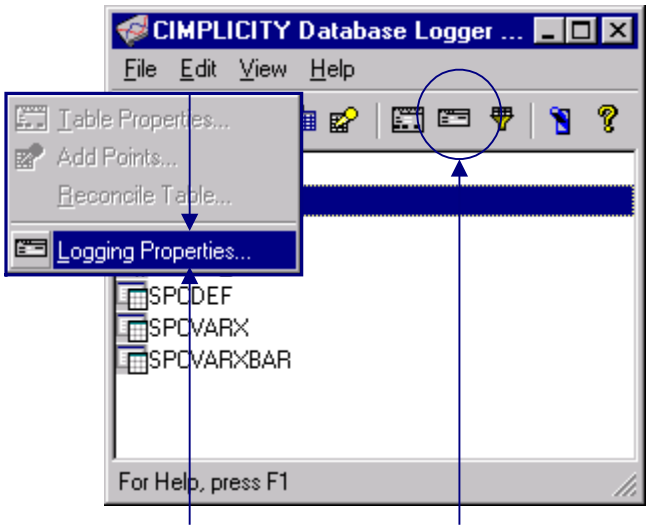
   A. Click Edit on the Database Logger configuration window menu bar, and

   B. Select Logging Properties,

   Or

   Press **Alt+E+G** on the keyboard.

Database Logger Configuration Window



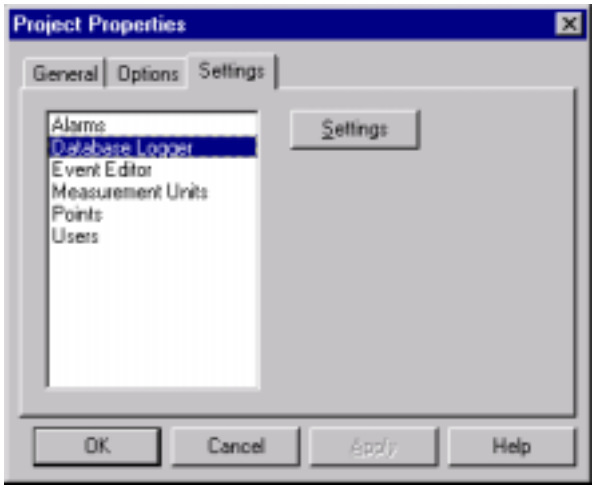
Use the Edit menu or the Logging Properties icon to open the Logging Properties dialog box.

Method 2–Project Properties dialog box

1. Click Project on the Workbench menu bar.
2. Select Properties.

   The Project Properties dialog box opens.
3. Select the Settings tab.
4. Select Database Logger.
5. Click **Settings** 

.

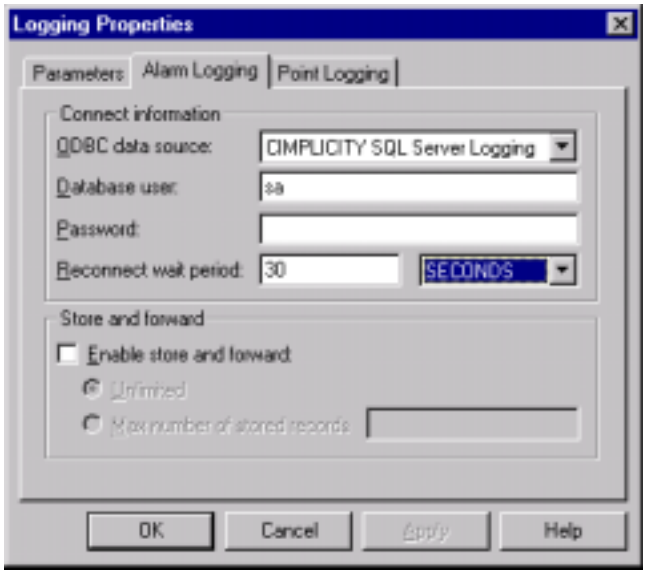


Result: The Logging Properties dialog box opens when you use any of the methods.

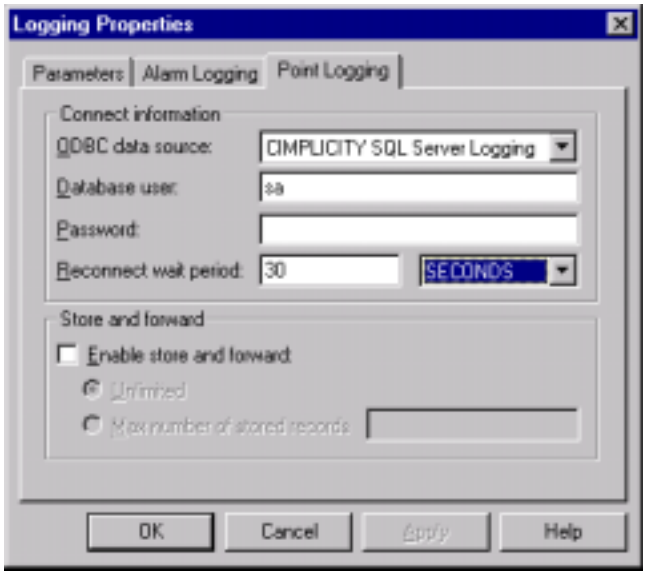
Step 2. Specify CIMPLICITY SQL Server Logging as the Data Source.

You can specify the CIMPLICITY SQL database for both alarm and point logging in the Logging Properties dialog box.

1. Select the Alarm Logging tab.



2. Select CIMPLICITY SQL Server Logging (or the name you specified for the SQL Server if you changed the default in the ODBC Data Source Administrator dialog box) in the ODBC data source field.
3. Select the Point Logging tab.



4. Select CIMPLICITY SQL Server Logging (or the name you specified for the SQL Server if you changed the default in the ODBC Data Source Administrator dialog box) in the ODBC data source field.

5. Click **OK**.

Result: CIMPLICITY HMI will now log alarm and point data to the CIMPLICITY SQL server.

See the "Database Logger" and "Managing Database Logging" chapters in the CIMPLICITY HMI Base System User's Manual for more information about CIMPLICITY HMI database logging.

Creating a CIMPLICITY HMI Service Dependency

About CIMPLICITY HMI Service Dependency– For Windows NT Only

Important: The feature described in this chapter only applies to implementations that have

- CIMPLICITY HMI and CIMPLICITY SQL Server on the same machine and
- CIMPLICITY SQL specified as the database logging database.

This feature will not work when CIMPLICITY HMI and CIMPLICITY SQL are on different computers.

Under Windows NT:

- CIMPLICITY HMI runs as a service that can be configured to start manually or automatically upon system boot

  See "System Boot Options" in the "Setting Up a CIMPLICITY Project" chapter in the CIMPLICITY HMI Base System User's Manual, GFK-1180, for information on how to configure CIMPLCITY HMI to start on boot.

  And

- CIMPLICITY SQL also runs as a service under Windows NT that can be configured to start manually or automatically upon system boot.

  See Step 1 in the "Configuring ODBC" chapter in this manual for more information.

CIMPLICITY HMI offers a feature to insure that CIMPLICITY SQL is completely started before starting CIMPLICITY HMI. This insures that logging will begin immediately.

The feature is a command line interface that allows you to create a service dependency.

When you create a ***service dependency***, the dependent service must be running before the HMI service will start.

If the dependent service is not running, CIMPLICITY HMI will attempt to start it.

By using the command line interface, you can make the CIMPLICITY HMI service dependent on the MSSQLServer service. As a result, you can ensure that the database will be running when your CIMPLICITY HMI project starts.

You create a service dependency in a Command Prompt window that you can open through the CIMPLICITY HMI Workbench.

The steps are:

Step 1. Open a Command Prompt window.

Step 2. View service details (to make sure the dependency doesn't exist already).

Step 3. Create the dependency.

Step 1. Open a Command Prompt Window

You can open the Command Prompt window through the Workbench.

1. Click Tools on the Workbench menu bar.
2. Select Command Prompt on the Tools menu.

   A Command Prompt window opens.
3. Display a **C:\>** prompt where **C** is the drive on which CIMPLICITY HMI resides.
4. Type **CIMPLICITY /?** at the **C:\>** prompt to see a list of CIMPLICITY command line options.

```
C:\>CIMPLICITY /?

Usage:  CIMPLICITY -remove              -- installs the service
        CIMPLICITY -list                -- display service details
        CIMPLICITY -depend <service>    -- add service dependency
        CIMPLICITY -nodepend <service>  -- remove service dependency
```

Step 2. View Service Details

Use the **–list** option to view any listings under **Dependencies**.

1. Display a **C:\>** prompt in the Command Prompt window where **C** is the drive on which CIMPLICITY HMI resides.
2. Type **CIMPLICITY –list** at the **C:\>** prompt to see details about how the CIMPLICITY service is configured.

```
C:\>CIMPLICITY -list
Service: CIMPLICITY HMI Service
Runs As: LocalSystem
Project: none
Startup: MANUAL

Dependencies:
```

In the example above, there is nothing listed under **Dependencies**.

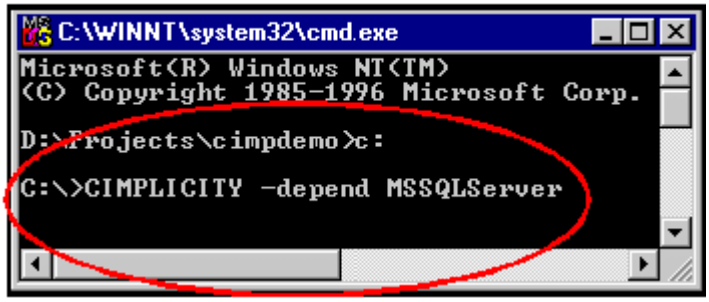
Step 3. Create the Dependency

Use the **-depend** option to create a CIMPLICITY HMI service dependency on the MSSQLServer service.

1. Click Tools on the Workbench menu bar.
2. Select Command Prompt on the Tools menu..

   A Command Prompt window opens.
3. Display a **C:\>** prompt where **C** is the drive on which CIMPLICITY HMI resides.
4. Enter **CIMPLICITY -depend MSSQLServer** at the **C:\>** prompt.

   -Depend Option Entered in an MS-DOS Window



5. Use the **-list** option again to verify that the dependency exists. *See Step 1 for the procedure to use the –list option.*

```
C:\>CIMPLICITY -list
Service: CIMPLICITY HMI Service
Runs As: LocalSystem
Project: none
Startup: MANUAL

Dependencies:
        MSSQLServer
```

Now CIMPLICITY HMI will start only after the MSSQLServer service is:

- Running or
- Started by CIMPLCITY HMI.

In the example above, MSSQLServer is listed under **Dependencies**.

CIMPLICITY SQL Server Dependencies Uninstall Information

Important: If you decide to uninstall CIMPLCITY SQL from your system, and you have created a service dependency, you need to make sure to remove the dependency. Otherwise, CIMPLICITY HMI can not run because the MSSQLServer service no longer exists on the system.

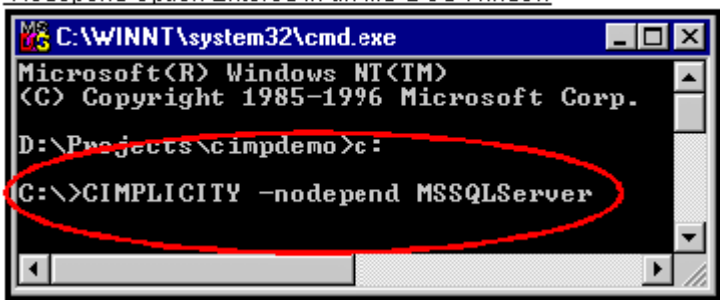
Use the **-nodepend** option to remove the dependency.

To remove a server dependency:

1. Click Tools on the Workbench menu bar.
2. Select Command Prompt on the Tools menu..

   An MS-DOS window opens.
3. Display a **C:\>** prompt where **C** is the drive on which CIMPLICITY HMI resides.
4. Enter **CIMPLICITY -nodepend MSSQLServer** at the **C:\>** prompt.

-Nodepend Option Entered in an MS-DOS Window



5. Use the **-list** option again to verify that the dependency has been removed. *See Step 1 for the procedure to use the –list option.*

```
C:\>CIMPLICITY -list
Service: CIMPLICITY HMI Service
Runs As: LocalSystem
Project: none
Startup: MANUAL

Dependencies:
```

In the example above, there is nothing listed under **Dependencies**.

Index

P

Q

R

S